VENUS OVDA REGIO STRATIGRAPHY AND TECTONICS: HIGHLANDS-PLAINS RELATIONSI 1 II'S; R. Stephen Saunders, Jet Propulsion Laboratory, California Institute of Technology, **4800** Oak Grove Drive, Pasadena,CA91109

The global plains materials of the Venusian lowlands, generally interpreted to be composed of flood basalts, lap onto the equatorial highlands of Western Aphrodite Regio. Systematic geologic mapping of the Ovda region using the Magellan global data (radar images, altimetry and gravity) has revealed that the contacts between highlands and plains have been tilted up toward the highlands after the plains emplacement. Analysis of the western part of Ovda Regio shows that the northern contact occurs at an average radius of 6053.8 km and the mean plains elevation 500 km to the north of the contact is at a radius of 6052.0 km, indicating that the boundary position has changed by nearly 2 km. Volcanic rilles are superposed on the tilted plains surfaces along both the northern and southern boundaries of the Ovda highlands. The local volcanicity that cut the rilles indicates that some local volcanic activity occurred subsequent to the marginal uplift. Models under study include post plains-emplacement uplift of the highlands or relative sinking of the plains. Isostatic mechanisms are likely in either case. Although complex structural models for the plains-highland margin are possible, simple structural models in which plains were emplaced as a nearly level geoidal surface and subsequently the highlands of Ovda were uplifted relative to the plains. Initial mapping is focused on 1:5,000,000 scale and is integrating observations of surface characteristics and geophysical inferences drawn from topography and gravity.

Systematic geologic mapping of the Ovda region is progressing at various scales. Initial mapping is at 1:5,000,000 scale to integrate observations of surface characteristics and geophysical inferences drawn from topography and gravity. Ovda and its margins record a complex sequence of events. The intense deformation that resulted in formation of Complex Ridged Terrane (CRT) is the earliest decipherable event. Following this deformation, the style of tectonics changed from pervasive regional deformation to localized uplift and fracture belt formation. The margins of Ovda were embayed during a large scale plains forming volcanic episode. Subsequently, the plains and the highlands were displaced relatively, with the plains uplifted relative to the marginal plains. The latest volcanic eruptions formed rilles that trend down slope to the north and south away from the Ovda highlands. Closely spaced fracture systems formed belts that cut all the regionally extensive earlier materials. The general relations between CRT and plains reveals much of the geologic history of Venus. Venus is not as geologically active as Earth and has had a strikingly different evolutionary history. Venus was tectonically violent during the earliest mappable epoch, of which little is preserved. Following the most recent violent tectonic episode, during which most of the present highlands formed, there was a relatively brief period dominated by volcanism that may have occurred some 300 to 500 m years ago. Global volcanism was followed by a relatively quiet period which extended to the present and was marked by sporadic volcanism. Detailed systematic global mapping will tie together the stratigraphic development of the diverse regions of highlands and allow us to address correlation of the events.